

C L A I M S

1. A process for manufacturing, moulding and curing
tyres for vehicle wheels, comprising the following steps:
 - 5 - manufacturing a green tyre comprising a raw elastomer material;
 - closing the green tyre into a moulding cavity defined in a vulcanization mould, said moulding cavity having walls the shape of which matches the shape of an outer
10 surface of the tyre when the vulcanization has been completed;
 - admitting a fluid under pressure to the space defined by an inner surface of the tyre in order to press the outer surface of the green tyre against the walls of the
15 moulding cavity;
 - administering heat to the tyre for producing the vulcanization of the raw elastomer material;
 - characterized in that said process, before the stage of admitting the fluid under pressure, further comprises a
20 treatment stage of the inner surface of the green tyre and adapted to prevent permeation of fluid under pressure into the inside of the tyre itself.
2. A process as in claim 1, wherein the stage of treating
25 the inner surface of the tyre is performed by associating at least one layer of prevulcanized elastomer material with the inner surface of the green tyre.
3. A process as in claim 2, wherein the stage of treating
30 the inner surface of the green tyre comprises the following steps: forming at least one layer of a raw elastomer material on an outer surface of a toroidal support the shape of which substantially matches the shape of the inner surface of the tyre; manufacturing the
35 green tyre on the toroidal support carrying said layer of raw elastomer material; prevulcanizing the layer of raw

elastomer material before introducing the green tyre into the vulcanization mould.

4. A process as in claim 3, wherein the prevulcanization
5 of the elastomer layer is carried out, at least partly, during the manufacturing of the tyre on the toroidal support.

5. A process as in claim 4, wherein the prevulcanization
10 of the elastomer layer takes place by heating the toroidal support.

6. A process as in claim 5, wherein the heating of the
toroidal support is at least partly achieved following
15 to the use of the toroidal support in a previous moulding and vulcanization cycle of a tyre.

7. A process as in anyone of claims 3 to 6, wherein the
formation of the layer of the raw elastomer material is
20 put into practice by applying a vulcanizable liquid composition (primer) to the outer surface of the toroidal support.

8. A process as in claim 7, wherein the primer comprises
25 a polymeric base and a vulcanizing system capable of being active during the green-tyre manufacturing step.

9. A process as in claim 8, wherein the vulcanizing
system which is present in the primer is complete and
30 therefore active already at the moment the primer is applied to the toroidal support.

10. A process as in claim 8, wherein the vulcanizing
system which is contained in the primer can be activated
35 only when it is brought into contact with the raw elastomer material constituting the innermost layer of

the tyre.

11. A process as in anyone of claims 7 to 10, wherein the
primer is in the form of a solution in a volatile organic
5 solvent.

12. A process as in anyone of claims 7 to 10, wherein the
primer is in the form of an aqueous emulsion.

10 13. A process as in anyone of claims 7 to 12, wherein the
primer is applied by spraying onto the outer surface of
the toroidal drum and subsequent evaporation of the
solvent.

15 14. A process as in anyone of claims 7 to 12, wherein the
primer is applied by dipping of the toroidal support
into the primer itself, by drawing out of the toroidal
support and by subsequent evaporation of the solvent.

20 15. A process as in anyone of claims 3 to 14, wherein a
layer of elastomer material (liner) suitable for ensuring
the retention of an inflating fluid of the tyre is
successively applied to the layer of raw elastomer
material formed on the outer surface of the toroidal
25 support.

16. A process as in claim 15, wherein the application of
at least one intermediate layer of the same composition
as that of the liner is interposed between the primer
30 application and the liner application.